Previous references.

1909
(Gen. Mis)

File No. 28 of 1909-10

Serial Nos. 1 – 16

later references.

GENERAL AND REVENUE SECRETARIAT.

Serial Nos. 1 – 16

Part B. for December 09

SUBJECT.

Inventions for "Improvement in the treatment of sands and the like with liquids"

1. From M. B. Lubrano, Bowcalli Bengal
Letter dated 14.5.09 & 7.7.09.
Forwards an appln. for grant of Letters Patent in Great Britain, in Wallis Block Estate St. Johannesburg, Transvaal for leave to file a specification for "Improvements in the treatment of sands and the like with liquids"

2 The officiating Secy. to H. Govt. No. G. 245 dated 16.7.09. Forwards to (Henry) received with ol. 1 & enclosures for disposal.

3. From the officer in charge of the S.P. 74.
No. 24 dated 17.5.09
Acknowledges receipt of R.10 Sketch with Sl. 2

4. To the State Geologist in Mysore
No. G. 604 dated 3.8.09
Forwards for obtaining report the Specimen received with Sl

5. From the State Geologist
No. 649 dated 30.9.09
Returns map received with the Specification sent with Sl. 4. also

6. From [illegible] Deputy Master Johannesburg
No. G. 1549 dated 11.9.09
Wants him Benniman to file the objection in person

7. To Mr. B. Subbanna, Advocate Bangalore
No. G. 1550 dated 11.9.09
Forwards the Sl. 6 for Communication to the party concerned requests and

8. From Mr. B. Subbanna Advocate Bangalore
dated 16.11.09
Encloses 6 copies of the Specification [illegible] Angles. and the model
Requires leave to file the Specification and prays that the Specification may be filed.

R.S.11] Register for 1909-10

1909-10.

GENERAL AND REVENUE SECRETARIAT

(Genl-mis)

NOTES.

Genl File No. 28/09-10

FILE HEADING.

Invention for "Improvements in the treatment of sands and the like with liquids".

From

Messrs B Subbanna, Advocate Bangalore

No. Dated 14.5.09 Received 7.7.09.

Diary No. 114.	Enclos.	Spare Copies	Serial No. 1

BRIEF ABSTRACT OF LETTER.

Forwards an application of Charles Edwin Draper Assignee, Assayer, of Wallach Block Eloff Street, Johannesburg, Transvaal, for leave to file a Specification for "Improvements in the treatment of sands and the like with the liquids".

NOTES AND ORDERS.

1. Write the above a sum of Rs 10 for the application fee and a Power of Attorney have been ~~are~~ received The fee will be remitted to the Dy. But, the power of attorney is stamped with a Mysore Court fee stamps

NOTES—First sheet.

GPB—30,000—3-4-07.

Serial No.

of Rs 2 in value. All powers of Attorney are generally sent to the Supt. of Stamps with the necessary fees for being embossed with Mysore stamps. It is not known whether the present document drawn up on a paper stamped with Court-fees stamps may be accepted.

Again the value of stamp is Rs 5- if the power of attorney is to carry out the general transaction of business on behalf of any firm &c. or Re one if it is in a particular transaction, as required by the Stamps Regn. But the Power of Attorney now received is stamped with a stamps of two rupees in value

2 May next B. Subbanna be asked to explain the above points

Submit for orders

(Sd/- [illegible] 13.7.09)

3 Issue draft to Huzur Dr.

4. Re Power of Attorney please ascertain from Br III if Court fee stamps can be accepted on powers of attorney. The power is under a Spl. Regn & 5 Rs stamps does not seem to be necessary.

Branch III

CSB
13/7/09

13/7

[illegible]
13/7

NOTE—Contn. sheet.

GPB—50,000—13-5-08

Serial No. 2

D 114

The Officer in charge of the Stamp Registry
No-C 2458 & 16-7-09
Forwards Rs 10/- 2008 note Sd/- &
requests acknowledgment

J. 19/7

is forwarded to Branch III for opinion in
regard to Undersey's remarks in para
4 of this note

(C 19-7-09)

Sd/-
SW
19/7/09

6 Sec[s] 44 to 46 of the Patents and Designs Act[Rep[n]] authorise the applicant for an invention to get certain things done through an agent. This word has not been defined in that Regulation nor is there any definition of it to be found in the General Clauses Act

7. The Agent in this case is a legal practicioner, and so he has filed what is really a Vakalatnama which is properly stamped with Court fee Stamps. If he were not a legal practicioner a power of Attorney as defined in the Stamp Regulation would have been necessary and it would have to be stamped as under that regulation

Entitled to practise in Mysore

Empowered in Mysore

NOTE—Contn. sheet.

GPB—50.000—18-5-08

Serial No.

(Please see Sec 2 clause 21 of the Stamp Regulation and no 6 of Schedule 2 of the Court Fees Regulation).

8. It seems to me therefore that the document is properly stamped.

22/7/09 SH

9. Lo Br V

22/7/09 SH

10. Forwarded to the Govt Advocate for favour of opinion

B.O.

Secretary

Solicitor

23/7/09

11. The Inventions and Designs Regulation 1894 permits the agent of an applicant to do certain acts -- for him, provided the authority be in writing (sections 44 and 46). The question for consideration is whether this written authority should be stamped -- under the general Stamp Regulation or under the Court fees Regulation. The document certainly comes within the scope of the definition (section 2 (21)) of a - power of attorney in the Stamp Regulation, if it not

NOTE—Contn. sheet.

GPB—50.000—18-5-08

Serial No.

114

be not chargeable with a fee under the Court-fees - Regulation.

12. But I am of opinion that the Vakalthnama in - question does come within clause 6 of Schedule II - of the Court-fees Regulation. The enquiry to be held by Government under the Inventions and Designs Regulation may properly be called a case pending before the Chief executive authority in which evidence may have to be taken and a final order passed. It is -- therefore properly stamped under para (b) of the said clause with a Court-fee stamp of Rupees Two.

S. Narayana Rao
Govt adv

28.7.09.

Subd.
SW 29/7 1[illegible] G. Bracht

29/7/09 Sd

3. From the officer in charge of stamps
Dy. No 24 d 17.5.09
Acknowledges the receipt of Rs 10
Secy with 8 C 2

1[illegible]; The above is subd for perusal.
i Orders re the note in paras 4 & 8, are requi
iii offr forwarding the specification
to the State Geologist for enquiry

In the Govt. Advocate is of opinion that the Vakalathnama is improperly stamped, it may be accepted
30/7

NOTE—Contn. sheet.

GPB—50.000—18-5-08

Serial No.	
	opinion is submitted for approval. (C. bur. 30.7.09) 15/10 Issue 30.7.09
4	To the State Geologist Bangalore No. 920 C 604 & 3.8.09. Forwards for opinion report & Specification recd with cl 1
5	From the above officer. No 669 & 30.9.09 Returns with remarks the Specification sent with cl 4 above. The State Geologist to whom the above Specification was sent for expert opinion says that the invention is carefully & sufficiently described and that it is in his opinion novel & useful & recommends grant if ordered, order for grant Leave to file a Specification will hereon Submit with a draft order & a despatch forwarding letter (C. bur. 4.9.09) 17. Issue.
6	To Mr Charles Edwin Draper Mysore No C 1549 & 11.9.09. Grants him permission to file the Specification in question
7	To Mr B. Subbanna Advocate, Bangalore

NOTE—Contn. sheet.

GPB—50,000—18-5-08

General and Revenue Secretariat.

E.M. File No. 28 of 190 9-10

Serial No.

8

No G 15509 11.9.09.
Forwarded for communication to the party concerned Registered
No — dated 16/11/09
From B. Subbanna Advocate
Submits 6 copies of the Specification, Rs 30/- and the order granting leave to file the specification and prays that the specification might be filed
18. Subd. with drafts as follows
(1) To the Officer in charge of the State Huzur Treasury with Rs 30/-
(2) Notification
(3) Letter to B. Subbanna Advocate forwarding a copy of the Notification for information and the order granting leave to file a specification with the certificate at the bottom signed, for information to the party concerned and
(4) To the State Geologist, the Chief Engineer and the Supdt. Govt. Museum forwarding with a copy of the Specification to each
19. The order granting leave to file the specification to be written with its Office draft to have to be signed at the bottom 20. D.S.R.L.

Logos R+Q

Sd
15/9/09

Sd 22/11/09

26/11/09 Sd

NOTE—Contn. sheet.

GPB—50,000—15-5-08

G. R. S. 12]
General and Revenue Secretariat.

Gm File No. 28 of 1909-10

Serial No.	
9	To the Compiler, Mysore Gazette — No G. 3057 G. 2-12-09 — Notifies the filing of the specification of the invention in question.
10	To Mr B Subbanna, Advocate, Bangalore No. G. 3058 G. 2-12-09 — To for Communication to the applicants a copy of Sl. 9 together with Sl. 6 with the certificate at its foot duly attested
11	To the Officer in charge of the State Huzur Treasury — No. G. 3059 G. 2-12-09 Forwards the fee of Rs 30 received with Sl. 8 & requests a receipt for the same
12	To the Chief Engr, the State Geologist the Supdt Govt Museum — No. G. 3060-2 G. 2-12-09 Forwards a copy of the specification to each of them for being filed in their respective Offices
13	No 151 dated 4/12/09 from the Officer in charge of the State Huzur Treasury Acknowledges the receipt of Rs 30/- sent with Sl 11
14	No 1287 dated 7/12/09 from the State Geologist Acknowledges the receipt of the specification sent with Sl 12
15	No 87 dated 7th Dec: 09 from the Supdt Govt Museum Acknowledges the receipt of the specification

NOTE—Contn. sheet.

GPB—50,000—18-5-08

G. R. S. 12]
General and Revenue
Secretariat.

S. M. File No. 28 of 1907-10

9

Serial No.	
	Sent with sl. 12
16	From the Chief Engineer No 95-28 dated 18/12/09 Acknowledges the receipt of the specification dated sent with sl 21. Submitted. This may be recorded now ed 29/12/09 VS 22. Sd 5/1/10

NOTE—Contn. sheet

GPB—55,000—27-4-09

POWER OF ATTORNEY

In the matter of the Inventions and Designs Regulation, 1894, of the Government of Mysore and in the matter of CHARLES EDWIN DRAPER USHER, Assayer, of Walter Block, Elo Street, Johannesburg, Transvaal an Inventor.

I, the above named CHARLES EDWIN DRAPER USHER, do hereby retain, constitute and appoint Mr B. Subbanna Ba. Bl. advocate as my Agent and Attorney to apply for and obtain from the Government of Mysore and keep in force an Exclusive Privilege or Letters Patent for "Improvements in the Treatment of Sands and the like with Liquids" and I authorise him to sign my name to such papers and writings and do such acts regarding the same, including the appointment of a substitute or substitutes as may be necessary or expedient.

Dated this 14th day of May 1909.

Chas E D Usher

Signed, sealed and delivered
at Johannesburg, in the presence of:

J W Jennings

Wesley E. John

Accepted
B Subbanna
advocate &
agent for mr
Draper
7th July 09

G.R.S. 29A]

16

190

From

Secy. to the Govt. of His Highness
the Maharaja of Mysore,
Genl. and Rev. Dept

To

The Officer in charge
of State Huzur Secy

Dated

Despatched 16.7.09 Bangalore.

Received

General No. G 2457 dtd 28-09-
No.

Enclosure No. Rs 10/-

Has the honor to remit herewith Rs 10 (ten of) being the application fee received from M/s B. Subbanna, Advocate, Bangalore for in respect of an invention for improvements in the treatment of sands and the like with liquids: and to request an acknowledgment

Bn

DBR

for Secy

Gen. 28-08-09
8(3.

D.315
9

As 24 Vide 9/17 Rs 10/-

Received From the Secretary to the Government of His Highness the Maharaja of Mysore, General and Revenue Departments, Bangalore the sum of Rupees ten only, being the application fee received from M/s. B. Subbanna, Advocate, Bangalore, in respect of an Invention for "Improvements in the treatment of lands and the like with liquids" and credited this day Vide, Secretary's No. G245/Gen 28-09-2 dated 16 July 1909.

H. H. THE MAHARAJA'S STATE HUZUR TREASURY,
BANGALORE, the 17 July 1909

~~BY ORDER,~~

Exd.

Hd. Acctt. ~~Bakshi.~~

Treasury Officer, State Huzur Treasury

PRINTED AT THE GOVERNMENT PRESS, MYSORE.

G.R.S. 29A]

190

From

Secy. to the Govt. of His Highness
the Maharaja of Mysore,
Genl. and Rev. Dept

To

The State Geologist
in Mysore

Dated

Despatched 3-8-09

Received

General No. 9604 / Gen 28-09-
No.

Enclosure No. One

Has the honor to forward
for report under Sec 6 (2)
of the Mysore Inventions and
Designs Regulation, a
Specification of an invention
for "Improvements in the
treatment of sands and
the like with liquids"
received from Mr. P. C.
Mukherjee Walker
Assayer, of Walker Block

MGCPT—20,000—16-9-05

Ecloff Street, Johannesburg,
Transvaal

By order

30/7.

21

MYSORE GEOLOGICAL DEPT.

190 0932

From

W. F. SMEETH Esq., M.A., A.R.S.M., &c.,
State Geologist in Mysore.

G. No. 28/09-10
dl 5

To

K. S. Shendruskhara Iyer, Esq
B.A. BL.,
Secretary to the Government
of H.H. the Maharaja of
Mysore

Dated

Despatched 30th August 1909.

Received

General No. 649.
No.

Enclosure No. One file.

His No. G. dtd 3rd Aug
of

Reports on the Specifi-
cation of an invention for
"Improvements in the treat-
ment of Sands and the like
with liquids" received
with the above

M. G. D. 13]

MYSORE GEOLOGICAL DEPARTMENT,

DATED BANGALORE, 30 August 1909.

No. 649 ame

From

DR. W. F. SMEETH, M.A., D.SC., A.R.S.M., etc.,
State Geologist in Mysore.

To

K.S. Chandrasekhara Iyer, Esquire, B.A.,B.L.,
Secretary to the Government of His Highnes
the Maharaja of Mysore.Gen.& Rev.Depts.

SIR,

In reply to your docket No.G.604, dated 3rd August 1909, forwarding for report a specification of an invention for "Improvements in the treatment of sands and the like with liquids received from Mr.Charles Edwin Draper Usher, Assayer, Johannesburg, I have the honour to state that I have examined the same and find that the invention is carefully and sufficiently described, and that it is in my opinion novel and likely to prove useful.

2. The enclosures received with your abovementioned docket are herewith returned.

I have the honour to be,
Sir,
Your most obedient servant,

W. F. Smeeth

C.N. State Geologist in Mysore

for

GPB—8-9-08—300

GOVERNMENT OF MYSORE

General Department.

Register No. 5 of 190 9-10.

Bangalore, the 11 Sept 190 9

WHEREAS an application, dated the 14th May 1909 and received on the 24th July 1909, has been submitted under Section 5 of the Mysore Inventions and Designs Regulation, 1894, by Mr Charles Edwin Deakes Usher, Assayer, J Walker Block, Eloff Street, Johannesburg, Transvaal (hereinafter referred to as "the applicant") for leave to file a specification of an invention for "Improvements in the treatment of sands and the like with liquids"

And whereas the applicant has duly complied with all the requirements of Section 5 of the said Regulation;

The Government of Mysore are pleased, under Section 6 of the said Regulation, to authorize the applicant to file a specification of the said invention in accordance with the provisions of the said Regulatio

ORDERED, that the applicant be, and he is hereby, informed accordingly.

By Order of the Government of Mysore,

for Secretary to the Govt. of Mysore,
Gen. and Rev. Depts

Certified that the fees prescribed in the fourth schedule to the Mysore Inventions and Designs Regulation, 1894, in respect of the application for leave to file the said specification and of the filing thereof have been paid by the applicant, and that the specification hereinbefore described has been duly filed in accordance with the provisions of Section 8 of the said Regulation on this the Sixteenth day of November 1909.

for Secretary to the Govt. of Mysore,
Gen. and Rev. Depts.

Section 8 of the Inventions and Designs Regulation, 1894.)

8. (1) If within six months from the date of an order under Section 6, Sub-Section (1), or within such further time, not exceeding three months, as the Government of Mysore, in its discretion, may, on cause shown to its satisfaction and on payment of the fee prescribed in that behalf in the fourth schedule, see fit to allow, the applicant causes a specification of his invention to be filed in manner by this Part required, and the fee prescribed in the fourth schedule in respect of the filing of the specification to be paid, the applicant shall, subject to the other provisions of this Part, be entitled to the exclusive privilege of making, selling and using the invention in the Territories of Mysore, and of authorizing others so to do, for a term of fourteen years from the date of the filing of the specificatioı

(2) But an exclusive privilege in respect of an invention of a new manufacture shall, notwithstanding anything in Sub-Section (1), cease, if the inventor fails to pay, within the time limited in that behalf by the fourth schedule, any fee prescribed in that schedule in respect of the continuance of the privilege.

(3) If, nevertheless, in any case, by accident, mistake, or inadvertence, an inventor fails to pay any such fee within the time so limited, he may apply to the Government of Mysore for an enlargement of the time for making the payment.

(4) Thereupon the Government of Mysore may enlarge the time accordingly, on payment of the fee prescribed in that behalf in the fourth schedule, and subject to the following conditions, namely :—

(*a*) the time for making a payment shall not in any case be enlarged for more than three months ; and

(*b*) if any suit is instituted in respect of an infringement of the exclusive privilege committed after a failure to make a payment within the time limited for the making thereof and before the enlargement of that time, the Court disposing of the suit may, if it thinks fit, refuse to award or give any damages in respect of the infringement.

G.R.S. 26]

File No. G 98 / 09-10

Serial No. 7

Diary No. of letter replied to

No. C. 15508 / 11.9.09

General and Revenue Secretariat

( )

the 190

Date of issue 11.9.09

Signed by M. C. Balasundaram

To Mr. B Subbanna B.A.B.
Advocate
Bangalore

Sir

With reference to the application dated the 14th ultimo of Mr. Charles Edwin Draper Ushers, Assayer, 7 Wallis Block Eloff Street, Johannesburg Transvaal, for leave to file a specification in respect of an invention for an improved treatment of sands and the like with regard, I am directed to forward

SUBJECT.

Herewith ~~the~~ order No
G 1529/Jun 28-09-6 dated
11.9.1909 issued in the
name of the applicants
and to request that the
same may be communi-
cated to the party concerned
and an acknowledgment
sent to this Office

I have &c

X bearing the Invention
Register No 5 of 1909-10

List of enclosures

Copied by AV

Examined by MS

V 16/11/09
Received Rupees thirty only 30/ 16/11/09

E.M. 28 of 1909-1; D. 1987 — 25
series 8

2

The Assessment of Damages.

B. Liebenberg, Attorney for Charles Edwin Draper Usher of Johannesburg begs to submit herewith Rupees 30/- and 6 Copies of the Specification for the improvement in the treatment of Sands and the like with liquid and the order granting leave to file the Specification

And prays that the Specification may be filed.

H. Duncan
Magistrate

B. Liebenberg
Advocate

MYSORE GEOL. DEPT.
Reg. No.
AUG. 1909
BANGALORE.

D-114

Rec'd 10/ Cover only
Ref to Mr Chemistry
7/7

Gen. 28/09-10.
Sec 1

APPLICATION FOR PATENT.

THE DEWAN OF MYSORE.

The Application of CHARLES EDWIN DRAPER USHER, Assayer, of Walter Block, Eloff Street, Johannesburg, Transvaal, for leave to file a Specification under Part I of the Mysore Inventions and Designs Regulation, 1894.

The Applicant is in possession of an Invention for "Improvements in the Treatment of Sands and the Like with Liquids"; he is the Inventor thereof; and, to the best of his information and belief, the Invention is new within the meaning of Part I of the Mysore Inventions and Designs Regulation, 1894, and no circumstance exists which, if the Applicant is authorised to file a Specification and files it in accordance with that Part, will disentitle him to an Exclusive Privilege thereunder in respect of the Invention.

The Applicant has not applied for a Patent in the United Kingdom or for an Exclusive Privilege in British India in respect of the Invention.

The following is a description of the I

This invention relates to the treatment of comminuted solids by liquids and in particular to the treatment of ores by solvent for the extraction of the metals therefrom.

In the efforts that have been made to accelerate and perfect the treatment of ores, the very finely divided particles, or "slimes", have been successfully treated by suspending them in liquid and gradually displacing said liquid by the introduction of fresh solvent or washing liquid at the bottom of the mass.

This method is rendered possible of execution by the extreme fineness of the material in question, which besides rendering flotation a very simple matter also causes the step of actual solution of the metal to be practically instantaneous, the larger part of the treatment time being spent in washing out the solvent liquid.

Such process is, however, obviously inapplicable to the larger ore particles which are usually designated as "sands" or "concentrates", since the material belonging to these classes is incapable of suspension in the same manner as slimes and the larger size of the grains renders the metallic contents much less accessible by the solvent. Such materials have therefore been commonly treated by the ordinary vat lixiviation, which is slow and calls for a large and expensive vat plant. It is the object of the present invention to provide a process and apparatus whereby sands and concentrates may be treated more as

According to the present process the treatment liquid is forcibly injected from a number of evenly distributed orifices into the lower part of a mass of ore, and over substantially the whole area thereof, in such manner as to cause the individual particles of ore to become substantially separated from one another by the liquid, and also to bring about relative movement between them, accompanied in a greater or less degree by mutual attrition. By this means the liquid is rapidly brought into contact with each individual particle, whilst at the same time the surfaces of the particles are continuously renewed by the attrition, the softer parts thereof, viz. the metal-bearing pyrites, or the metal itself, being most readily rubbed off and thus exposed freely to the action of the liquid. The liquid gradually passes upwardly through the mass, carrying the soluble parts of the ore with it and is caused to collect at the surface of the ore; as a rule also it is continuously drawn off and re-injected in the manner described. The solution may either be returned directly or after being passed through a precipitation or other treatment process.

When, as in the cyanide process, aeration is desirable, air is injected either with the liquid or alternately therewith; preferably the former since the whole operation is thereby accelerated.

The accompanying drawing shows apparatus suitable for carrying out the cyanide treatment of sands according to the invention; Fig. I being a partly

sectional elevation of the plant, Fig. II a partial plan thereof, Fig. III an enlarged sectional view of one of the distributing pipes, Fig. IV an end view of the pipe, Fig. V a transverse section on the plane A-A Fig. III, and Fig. VI a side elevation drawn to a reduced scale and showing a modification

I indicates a vat provided with the usual filter cloth 2 and having mounted upon or in proximity to its floor 23 a chamber 3 to which treatment liquid is fed for supplying the several distributing pipes 4. Said pipes 4 are in this instance disposed radially of the vat, their inner ends being screwed into the chamber 3 whilst their outer ends are passed in a watertight manner through the side 5 of the vat, and are provided with stuffing boxes 6. The pipes 4 are perforated with holes 7 for the ejection of the treatment liquid, such holes being directed in any desired direction but preferably towards the vat bottom as shown

Fitting snugly but movably within pipes 4 are the internal pipes 8. Said pipes 8 are closed at both ends by plugs 9 and when in the working position their ends project beyond the ends of pipes 4.

Near to the inner end of each pipe 8 is formed a large aperture 10 and along the length of said pipes are formed the holes 11, positioned to correspond with the holes 7, and preferably somewhat larger than the latter.

The projecting outer ends of pipes 8 are adapted in any suitable manner to permit their rotation. As shown, handles 12 are clipped to the ends of the

pipes, which by their position, afford a ready means of ascertaining whether the holes 7 are open or closed. Packing 13 within the stuffing boxes 6 forms tight joints between the pipes 4 and 8.

An overflow chamber 14 is built on the upper part of the vat to receive liquid from above the charge and is provided with the well-known sluice work device 15 by which the height of the overflow may be adjusted.

Treatment liquid is supplied to the chamber 3 by means of a pump 15 (directly or through an intermediate steady head) capable of delivering liquid at substantial pressure and having connections to the solution and wash sumps 16 and 17 respectively and, by means of pipe 19, to the overflow chamber 14. 20 is a pipe for conveying solution to the precipitati boxes, connectible either to the overflow chamber 14 or to the outlet 23 from under the filter mat. A valve 24 is provided for discharging barren liquid from under the filter mat.

Prior to commencing work, the holes 7 in the pipes 4 are closed by adjusting the inner pipes 8, and the slats 16 are built up to their maximum level a charge of sands is filled in to the vat and drained through the filter cloth 2 and valve 24; connection is then made between the solution sump 16 and the pump 15. The latter being started and the internal pipes immediately rotated to open the holes 7, solution passes from chamber 3 through apertures 10 and holes 11 and 7 and is then injected with considerable force under the entire mass of sands from a large number of

points simultaneously. The mass quickly fissures and disintegrates, and finally reaches a state of semi-suspension, being thoroughly opened out for the passage of liquid between the individual particles. As soon as the clear liquid collected at the surface of the mass, begins to flow over into chamber 14, the supply from the sump 16 is shut off and the pump is connected to chamber 14 so as to circulate the liquid through the ore. The suction pipe 19 is made of such diameter that the circulating liquid does not completely fill it, so that a quantity of air is drawn into the pump along with the solution and is subsequently disseminated throughout the vat contents in minute bubbles which materially assist the process of solution. Such circulation and aeration is continued until the gold is dissolved, whereupon , the holes 7 having been closed and the pump 15 stopped, the charge is allowed to settle and the gold bearing solution is passed to the precipitation boxes. In this step, the surface solutionmay first be run off through pipes 19 and 20 by gradually lowering the slats 18 and the remainder afterwards filtered through connection ax. [illegible]after weak washing solution is drawn from sump 1. and injected and removed similarly to the solvent solution.

When the treatment process is at an end, or suspended for any reason, the pipes 8 are rotated within pipes 4 so as to close the holes 7, as seen in Fig. V; such closure being preferably effected before the supply of liquid to chamber 3 is stopped, in order to prevent the ore granules from depositing within and choking the pipes. Similarly the amount of liquid

ejected from some or all of the pipes may be regulated by so turning pipes 8 as to partially close the holes 7.

In the event of a pipe 8 becoming clogged or otherwise rendered useless it may be withdrawn bodily from its surrounding pipe 4 and another substituted, thus permitting the treatment to be continued without any material stoppage.

The aperture 10 being formed in the side of the pipe 8 such aperture is closed immediately upon beginning to draw out said pipe, and escape of liquid is prevented except at the moment when the pipe is entirely withdrawn, when the escape may be stopped immediately by the insertion of a new pipe. Escape of liquid may be prevented entirely by inserting a valve 21 Fig. VI, in the pipe 4 between the wall of the vat and the stuffing box 6; such valve being closed as soon as the pipe 8 has been drawn past it but before its withdrawal from pipe 4. When a pipe 8 has been withdrawn it may be readily cleared and made available for further use after removal of the end plugs 9.

The treatment process described presupposes the existence of a charge of clean sand, but the novel apparatus enables the separation of slimes to be effected in the treatment vat, thus saving the cost of the usual collecting vat and of re-handling the sands. Thus, where it is desired to treat the whole mill product direct, the vat 1 is provided with the usual adjustable overflow for slimes. The mill pulp is fed directly into the vat and simultaneously water is injected through the pipes 4, so washing the slimes out

of the charge and causing them to pass off by the overflow. Such washing is continued as the overflow is raised and until nothing remains but a clean charge of sands. It may here be remarked that owing to the fact that the novel treatment always leaves the charge in a clean state, draining is effected very rapidly and the outlets from under the filter mat should be larger than in a lixiviation plant.

The above described methods of carrying out the process and the apparatus therefor, are given simply by way of example, and are not intended to limit the invention itself, which is particularly pointed out in the claims.

Attempts have been made to treat crushed ore by forcing the treatment liquid into it, under considerable pressure, from a single orifice or a comparatively few widely spaced orifices. When applied to the relatively heavy and coarse class of material contemplated by the present invention such attempts have failed owing to the jets from the separate nozzles cutting comparatively clear channels through the mass, the solid material packing around said channels and remaining practically unacted upon. Whilst each separate jet in the present apparatus tends to form such a single channel, their close proximity and the fact of their covering substantially the whole area of the vat effectually prevents such action, and the whole mass reaches a homogeneous state of semi-suspension. It becomes, in fact, a quick sand.

It is of course a well-known metallurgical operation to soak ore prior to lixiviation by quietly admitting solvent or wash water into it from below,

without materially disturbing the particles of ore. Such quiet soaking is usually known as "upward percolation", to which, in the sense defined, no claim is made.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:

1. The process of treating material of the nature specified, which consists in forcibly injectin treatment liquid into the lower part of a mass thereo through apertures which are in close proximity and extend over substantially the entire area of the containing vessel, in such manner as to cause substantial separation of the particles by the liquid, and to set up relative movement between them.

2. The process of treating material of the nature specified, which consists in forcibly injecting treatment liquid into the lower part of a mass thereof through apertures which are in close proximity and extend over substantially the entire area of the containing vessel, and thereby setting up a state of agitation of, and mutual attrition between the particles of the mass.

3. The process of treating material of the nature specified, which consists in forcibly injecting treatment liquid into the lower part of a mass thereof through apertures which are in close proximity and extend over substantially the entire area of the containing vessel, in such manner as to cause substantial separation of the particles by the liqui

set up relative movement between them, causing clear liquid to collect at the surface of the mass, drawing off the same and re-injecting it forcibly into the bottom of the mass.

4. The process of treating material of the nature specified, which consists in forcibly injecting treatment liquid into the lower part of a mass thereof in such manner as to cause substantial separation of the particles by the liquid, and to set up relative movement between them, causing clear liquid to collect at the surface of the mass, so drawing off the same as to include air with it and re-injecting the mixture of liquid and air forcibly into the bottom of the mass.

5. The process of treating material of the nature specified, which consists in forcibly injecting treatment liquid into the lower part of a mass thereof through apertures which are in close proximity and extend over substantially the entire area of the containing vessel and thereby setting up a state of agitation of, and mutual attrition between the particles of the mass, causing clear liquid to collect at the surface of the mass, drawing off the same and re-injecting it forcibly into the bottom of the mass.

6. The process of treating material of the nature specified which consists in forcibly injecting treatment liquid and air into the bottom of a mass thereof in such manner as to cause substantial separation of the particles, and to set up relative movement between th

7. Apparatus for carrying out treatment processes of the kind herein referred to, comprising a vat, fixed perforated distributing pipes therein each having one end projecting externally of the vat, a

source of supply for substantially clear treatment liquid with which said fixed pipes are in connection, and loose pipes arranged internally of the fixed pipes and projecting from the open ends thereof and having perforations corresponding to those of the fixed pipes.

8. Apparatus for carrying out treatment processes of the kind herein referred to, comprising a vat, fixed perforated distributing pipes therein, each having one end in communication with a source of supply and the other end projecting externally of the vat, loose pipes arranged internally of the fixed pipes and projecting from the open ends thereof, said loose pipes being perforated correspondingly with the fixed pipes and having lateral inlet apertures near to their inner ends, and removable plugs closing the ends of the loose pipes.

9. Apparatus for carrying out treatment processes of the kind herein referred to, comprising a vat, fixed perforated distributing pipes therein in communication with a source of supply, each having one end projecting externally of the vat and loose pipes arranged internally of the fixed pipes and projecting from the open ends thereof and having perforations corresponding to those of the fixed pipes, and having at their projecting ends means for effecting their rotation.

10. Apparatus for carrying out treatment processes of the kind herein referred to, comprising a vat, perforated distributing piping, a source of supply of substantially clear treatment liquid to which

said piping is connected, said piping being carried through the side of the vat, and movable means carried internally of the piping and operated from the exterior of the vat for controlling the perforations thereof.

11. Apparatus for carrying out treatment processes of the kind herein referred to, comprising perforated distributing piping opening externally of the vat at points remote from the source of supply and removable closing means therefor, said last named means serving to regulate the amount of opening of the perforations.

12. Apparatus for carrying out treatment processes of the kind herein referred to, comprising a vat, fixed distributing piping therein, movable piping arranged internally of the fixed piping and a valve in the fixed piping for closing the same prior to the removal of the movable piping.

The Applicant therefore, applies for leave to file a Specification of the Invention pursuant to Part I of the Mysore Inventions and Designs Regulation, 1894.

B Subbanna
advocate &
agent for applicant.
7.Jun'09

Chas E D Waterhouse

I, the Applicant above named, do declare that the facts stated in this application are true to my knowledge, except as to matters stated on information and belief and as to those matters I believe them to be true.

Dated this 14th day of May 1909.

Chas E D Waterhouse

This invention relates to the treatment of comminuted solids by liquids and in particular to the treatment of ores by solvent for the extraction of the metals therefrom.

In the efforts that have been made to accelerate and perfect the treatment of ores, the very finely divided particles, or "slimes", have been successfully treated by suspending them in liquid and gradually displacing said liquid by the introduction of fresh solvent or washing liquid at the bottom of the mass.

This method is rendered possible of execution by the extreme fineness of the material in question, which besides rendering flotation a very simple matter, also causes the step of actual solution of the metal to be practically instantaneous, the larger part of the treatment time being spent in washing out the solvent liquid.

Such process is, however, obviously inapplicable to the larger ore particles which are usually designated as "sands" or "concentrates", since the material belonging to these classes is incapable of suspension in the same manner as slimes and the larger size of the grains renders the metallic contents much less accessible by the solvent. Such materials have therefore been commonly treated by the ordinary vat lixiviation, which is slow and calls for a large and expensive vat plant. It is the object of the present invention to provide a process and apparatus whereby sands and concentrates may be treated more rapidly and with better extraction than heretofore.

According to the present process the treatment liquid is forcibly injected from a number of evenly distributed orifices into the lower part of a mass of ore, and over substantially the whole area thereof, in such manner as to cause the individual particles of ore to become substantially separated from one another by the liquid, and also to bring about relative movement between them, accompanied in a greater or less degree by mutual attrition. By this means the liquid is rapidly brought into contact with each individual particle, whilst at the same time the surfaces of the particles are continuously renewed by the attrition, the softer parts thereof, viz. the metal-bearing pyrites, or the metal itself, being most readily rubbed off and thus exposed freely to the action of the liquid. The liquid gradually passes upwardly through the mass, carrying the soluble parts of the ore with it and is caused to collect at the surface of the ore; as a rule also it is continuously drawn off and re-injected in the manner described. The solution may either be returned directly or after being passed through a precipitation or other treatment process.

When, as in the cyanide process aeration is desirable, air is injected either with the liquid or alternately therewith; preferably the former since the whole operation is thereby accelerated.

The accompanying drawing shows apparatus suitable for carrying out the cyanide treatment of sands according to the invention; Fig. I being a partly

sectional elevation of the plant, Fig. II a partial plan thereof, Fig. III an enlarged sectional view of one of the distributing pipes, Fig. IV an end view of the pipe, Fig. V a transverse section on the plane A-A Fig. III, and Fig. VI a side elevation drawn to a reduced scale and showing a modification.

I indicates a vat provided with the usual filter cloth 2 and having mounted upon or in proximity to its floor 22 a chamber 3 to which treatment liquid is fed for supplying the several distributing pipes 4. Said pipes 4 are in this instance disposed radially of the vat, their inner ends being screwed into the chamber 3 whilst their outer ends are passed in a watertight manner through the side 5 of the vat, and are provided with stuffing boxes 6. The pipes 4 are perforated with holes 7 for the ejection of the treatment liquid, such holes being directed in any desired direction but preferably towards the vat bottom as shown.

Fitting snugly but movably within pipes 4 are the internal pipes 8. Said pipes 8 are closed at both ends by plugs 9 and when in the working position their ends project beyond the ends of pipes 4.

Near to the inner end of each pipe 8 is formed a large aperture 10 and along the length of said pipes are formed the holes 11, positioned to correspond with the holes 7, and preferably somewhat larger than the latter.

The projecting outer ends of pipes 8 are adapted in any suitable manner to permit their rotation. As shown, handles 12 are clipped to the ends of the

pipes, which by their position, afford a ready means of ascertaining whether the holes 7 are open or closed. Packing 13 within the stuffing boxes 6 forms tight joints between the pipes 4 and 8.

An overflow chamber 14 is built on the upper part of the vat to receive liquid from above the charge and is provided with the well-known slat work device 18 by which the height of the overflow may be adjusted.

Treatment liquid is supplied to the chamber 3 by means of a pump 15 (directly or through an intermediate steady head) capable of delivering liquid at substantial pressure and having connections to the solution and wash sumps 16 and 17 respectively and, by means of pipe 19, to the overflow chamber 14. 20 is a pipe for conveying solution to the precipitation boxes, connectible either to the overflow chamber 14 or to the outlet 23 from under the filter mat. A valve 24 is provided for discharging barren liquid from under the filter mat.

Prior to commencing work, the holes 7 in the pipes 4 are closed by adjusting the inner pipes 8, and the slats 18 are built up to their maximum level a charge of sands is filled into the vat and drained through the filter cloth 2 and valve 24; connection is then made between the solution sump 16 and the pump 15. The latter being started and the internal pipes immediately rotated to open the holes 7, solution passes from chamber 3 through apertures 10 and holes 11 and 7 and is then injected with considerable force under the entire mass of sands from a large number of

points simultaneously. The mass quickly fissures and disintegrates, and finally reaches a state of semi-suspension, being thoroughly opened out for the passage of liquid between the individual particles. As soon as the clear liquid collected at the surface of the mass, begins to flow over into chamber 14, the supply from the sump 16 is shut off and the pump is connected to chamber 14 so as to circulate the liquid through the ore. The suction pipe 19 is made of such diameter that the circulating liquid does not completely fill it, so that a quantity of air is drawn into the pump along with the solution and is subsequently disseminated throughout the vat contents in minute bubbles which materially assist the process of solution. Such circulation and aeration is continued until the gold is dissolved, whereupon , the holes 7 having been closed and the pump 15 stopped, the charge is allowed to settle and the gold bearing solution is passed to the precipitation boxes. In this step, the surface solutionmay first be run off through pipes 19 and 20 by gradually lowering the slats 18 and the remainder afterwards filtered through connection 23. Thereafter weak washing solution is drawn from sump 17 and injected and removed similarly to the solvent solution.

When the treatment process is at an end, or suspended for any reason, the pipes 8 are rotated within pipes 4 so as to close the holes 7, as seen in Fig. V; such closure being preferably effected before the supply of liquid to chamber 3 is stopped, in order to prevent the ore granules from depositing within and choking the pipes. Similarly the amount of liquid

In the event of a pipe 8 becoming clogged or otherwise rendered useless it may be withdrawn bodily from its surrounding pipe 4 and another substituted, thus permitting the treatment to be continued without any material stoppage.

The aperture 10 being formed in the side of the pipe 8 such aperture is closed immediately upon beginning to draw out said pipe, and escape of liquid is prevented except at the moment when the pipe is entirely withdrawn, when the escape may be stopped immediately by the insertion of a new pipe. Escape of liquid may be prevented entirely by inserting a valve 21 Fig. VI, in the pipe 4 between the wall of the vat and the stuffing box 6; such valve being closed as soon as the pipe 8 has been drawn past it but before its withdrawal from pipe 4. When a pipe 8 has been withdrawn it may be readily cleared and made available for further use after removal of the end plugs 9.

The treatment process described presupposes the existence of a charge of clean sand, but the novel apparatus enables the separation of slimes to be effected in the treatment vat, thus saving the cost of the usual collecting vat and of re-handling the sands. Thus, where it is desired to treat the whole mill product direct, the vat 1 is provided with the usual adjustable overflow for slimes. The mill pulp is fed directly into the vat and simultaneously water is injected through the pipes 4, so washing the slimes out

of the charge and causing them to pass off by the overflow. Such washing is continued as the overflow is raised and until nothing remains but a clean charge of sands. It may here be remarked that owing to the fact that the novel treatment always leaves the charge in a clean state, draining is effected very rapidly and the outlets from under the filter mat should be larger than in a lixiviation plant.

The above described methods of carrying out the process and the apparatus therefor, are given simply by way of example, and are not intended to limit the invention itself, which is particularly pointed out in the claims.

Attempts have been made to treat crushed ore by forcing the treatment liquid into it, under considerable pressure, from a single orifice or a comparatively few widely spaced orifices. When applied to the relatively heavy and coarse class of material contemplated by the present invention such attempts have failed owing to the jets from the separate nozzles cutting comparatively clear channels through the mass the solid material packing around said channels and remaining practically unacted upon. Whilst each separate jet in the present apparatus tends to form such a single channel, their close proximity and the fact of their covering substantially the whole area of the vat effectually prevents such action, and the whole mass reaches a homogeneous state of semi-suspension. It becomes, in fact, a quick sand.

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11. Apparatus for carrying out treatment processes of the kind herein referred to, comprising perforated distributing piping opening externally of the vat at points remote from the source of supply and removable closing means therefor, said last named means serving to regulate the amount of opening of the perforations.

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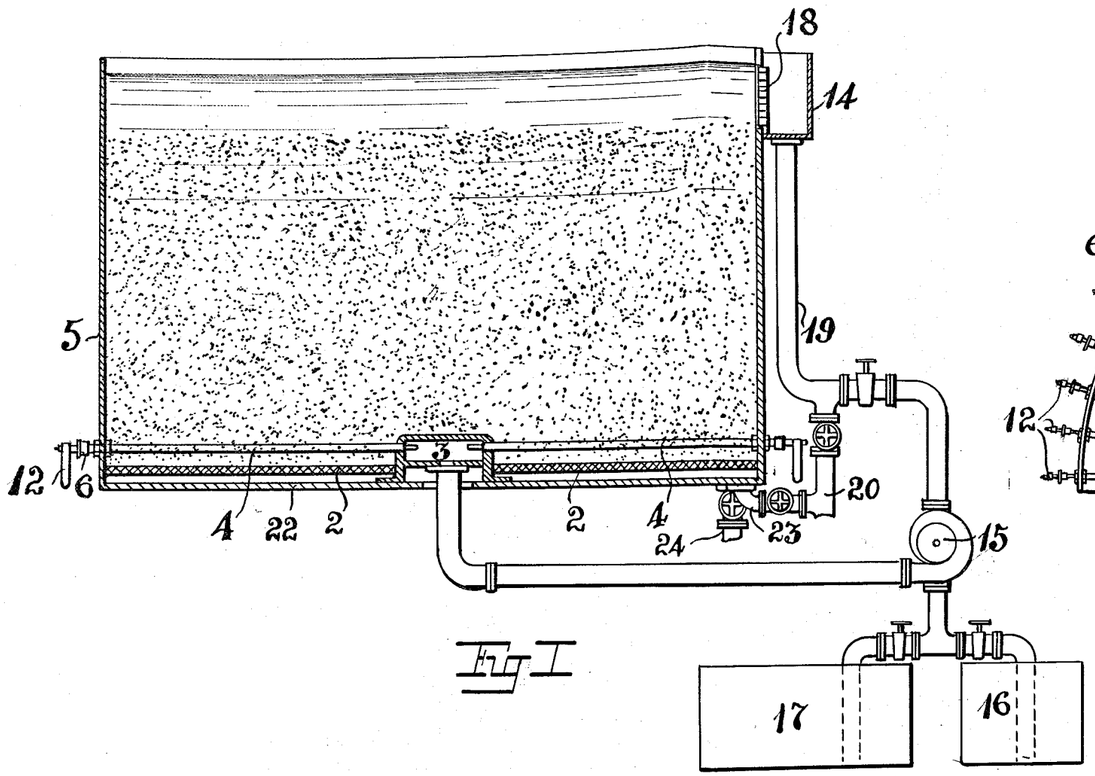
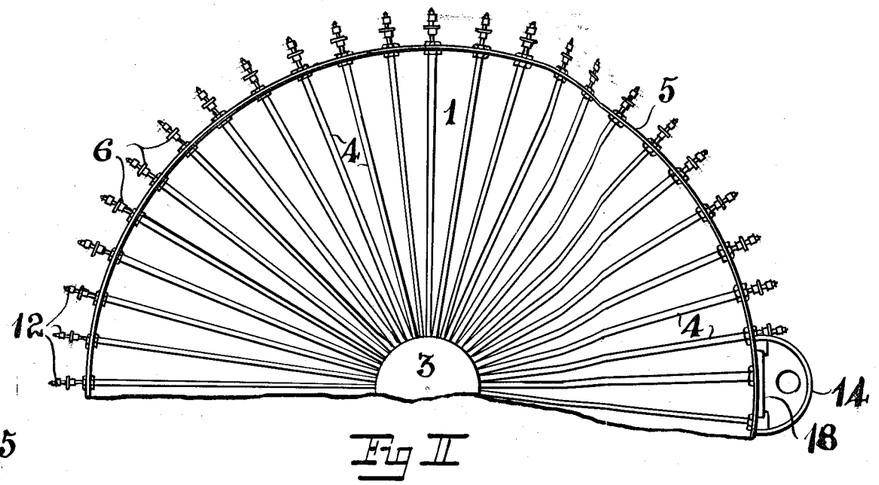
Chas E Tench



Фиг I



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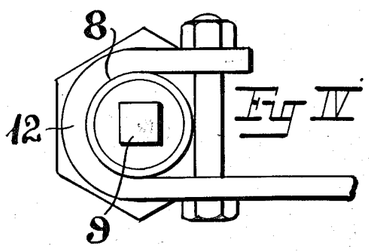

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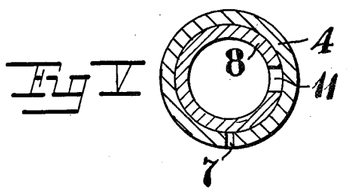
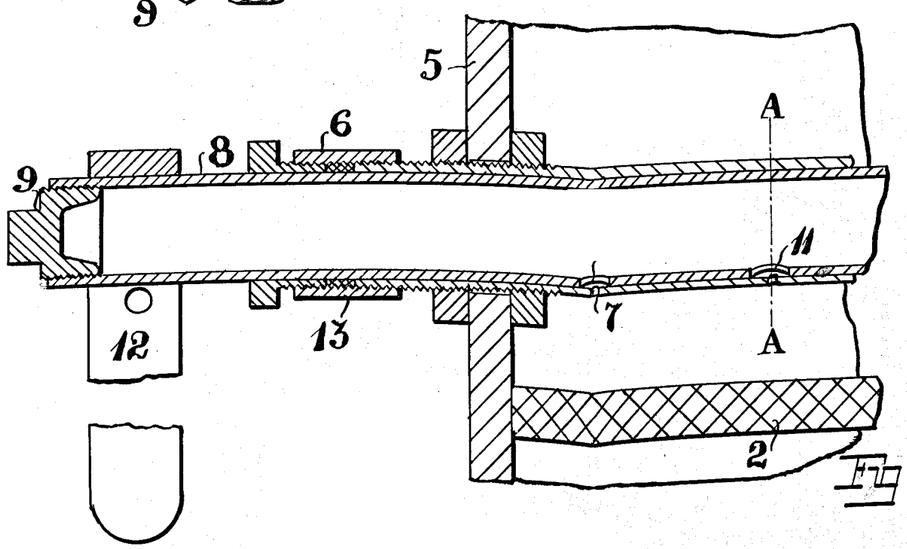
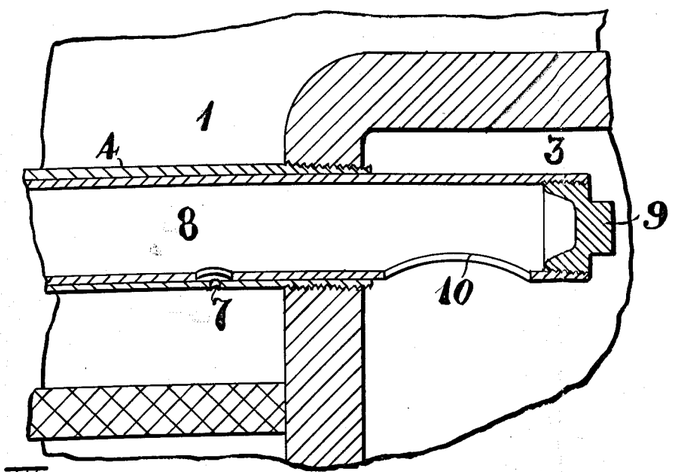


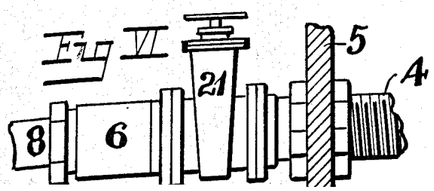
Фиг V



Фиг III



Фиг VI



No. G. 3057
Gen 28-09-9

MYSORE GOVT, GEN. & REV. SECRETARIA

Dated Bangalore, 2-12- 1909.

NOTIFICATION.

(PATENT.)

The following specification of an invention has been filed in accordance with Sections 8, 9, 10 and 11 of Regulation XI of 1894 (The Inventions and Designs Regulations) and is open to inspection at the Mysore Government Secretariat on application to the Secretary to the Government of His Highness the Maharaja of Mysore, General and Revenue Departments, and on payment of a fee of one Rupee.

By Mr. Charles Edwin Draper Usher, Assayer of Walker Block, Eloff Street, Johannesburg, Transvaal,

"Improvements in the treatment of sands and the like with liquids"

By Order,

for Secretary

To

The Compiler, *Mysore Gazette*, for publication.

Draft-

No. G.3058 Encl-1
0 1903-10

MYSORE GOVT. GEN. & REV. SECRETARIAT,

Dated Bangalore 23 Dec 1909.

From

The Secretary to the Government of H. H. the Maharaja of Mysore,
General and Revenue Departments.

To

B. Subbanna Esqr.
Advocate
Bangalore

SIR,

With reference to your letter dated 16-11-09 I am directed to forward copy of a Notification No. dated issued by this Government in regard to the invention filed by you under Regulation XI of 1894 (The Inventions and Designs Regulations), for communication to Mr. Charles Edwin Draper Usher, Assayer of Walter Block, Eloff Street, Johannesburg, Transvaal.

The order granting permission to file specification is herewith returned, with the certificate at foot, duly filled in and signed.

I have the honor to be,
Sir,
Your most obedient servant,

for Secretary.

VS

Acd
30/11

G.R.S. 26]

4 drafts

File No. 220

Serial No. 11

Diary No. of letter replied to

with Rs 301 & cover returned by post 4/12/09

No G. 3059

General and Revenue Secretariat

( )

, the 190

To

The Officer in charge
of the Estate Huzur Dressar
Bangalore

Date of issue 2-12-09

Signed by L. S. Hungamanya

Has the honor to forward herewith Rs 301. being the fee paid by Mr Charles Edwin Draper Usher, Assayer of Walter Block, Eloff Street ~~Gobnesb~~ Johannesburg, Transvaal, for filing the specification relating to his invention for "Improvements in the treatment of sands and the like with liquids" and to request an acknowledgment thereof.

~~SUBJECT.~~

21/11/09

By order

for Secretary

15

G.R.S. 29A]

190 .

From

Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To
(1) The Chief Engineer
(2) The State Geologist
and (3) The Supdt. Govt. Museum
Dated
Despatched 22 Dec 1909
Received
General No. G. 3060-2
No. Fin 28-09-12
Enclosure No. 1.

Has the honor to forward herewith for being filed in his office a copy of the specification filed by Mr Charles Edwin Draper Usher, Assayer of Walter Block, Eloff Street, Johannesburg Transvaal in respect of his invention for "Improvements in the treatment of sands and the like with liquid

By order

for Secretary

GPB—10,000—9-4-0(

MYSORE GOVERNMENT.

No. 151

E.M. 28 of 09-10 & 13 Pos 30/. 9

D 2222

Received From the Secretary to the Government of His Highness the Maharaja of Mysore, General and Revenue Department,

the sum of Rupees Thirty only, being the fee paid by Mr. Charles Edwin Draper Usher & of Johannesburg, Transvaal for filing a Specification relating to the "Improvements in the treatment of Sands &c and credited this Dec. Vide, His No. G 3059/Gen 28-09-11. Dated 2-12-1909.

H.-H. THE MAHARAJA'S STATE HUZUR TREASURY,
BANGALORE, the 4 December 1909

~~BY ORDER,~~

Exd.

Hd. Acctt. ~~Rakshi~~

Treasury Officer, State Huzur Treasury.

G. M. 28 of 1909-10
SE 16
D 2240/3

M. G. D. 13]

MYSORE GEOLOGICAL DEPARTMENT,

DATED BANGALORE, 7th December 1909.

No. 1287.

From

DR. W. F. SMEETH, M.A., D.SC., A.R.S.M., etc.,
State Geologist in Mysore.

To

The Secretary to the Government of His Highness
the Maharaja of Mysore,
General & Revenue Departments.

SIR,

I have the honour to acknowledge the receipt of a copy of the specification in respect of an invention for "Improvement in the treatment of sands and the like with liquids", forwarded with your docket No.G.3060-2/G.M.28-09-12, dated 2nd December 1909 for record in this office.

I have the honour to be,
Sir,
Your most obedient servant,

for State Geologist in Mysore

S. M. 28 of 1908-No. III-1
SVS
SE2 SC15

D 2241
9

1909-10.

From G. A. Krumbiegel, Esq.,
Superintendent,
Mysore Govt. Museum
Bangalore.

To K. S. Chandrasekhara Aiyar, B.A., B.L.,
Secretary to the Government of H.H.
the Maharaja of Mysore, General
and Revenue Depttts., Bangalore.

Dated
Despatched 7th } December 190
Received

General No. 87
No.

Enclosure No.

Acknowledging the receipt
of a Copy of the Specificatn
in respect of an invention for
"Improvements in the treatment
of Sands and the like with
liquids" by Mr. Charles Edwin Draper Jr.
Johannesburg, Transvaal.

No. 87

Mysore Government Museum,
Bangalore, 7th December 1909.

From G. H. Krumbiegel, Esq.,
Superintendent,
Mysore Government Museum,
Bangalore.

To K. S. Chandrasekhara Aiyar, Esq., B.A., B.L.
Secretary to the Government of His Highness
the Maharaja of Mysore, General & Revenue
Departments, Bangalore.

Sir,

I have the honor to acknowledge
receipt of a Copy of the Specification in re
of an invention for "Improvements in the treatment
of Sands and the like with liquids" by Mr Charles
Edwin Draper Usher, Johannesburg, Transvaal
forwarded with Your No. G.-3060-2/G.M 28-09-1.
of the 2nd instant.

I have the honor to be,
Sir
Your most obedient Servant,

D.242,

95-28

G.M.28 of 1909-10

8C 16

MYSORE P. W. DEPARTMENT,

CENTRAL OFFICE,

Bangalore, 18 th. December 1909

From

M.Visvesvaraya Esquire,M.I.C.E.,

~~XXXX

9. To the Compiler, Nyasaland Gazette

No. G. 3057 dated 2.12.09

Re: the filing of the Specification in Question.

10. To M. B. Dalbanna Advocate Bandala

No. G. 3058 dated 2.12.09.

Forwards for Communication to the applicant a copy of Sl. 9. together with Sl. 6 with the certificate at its foot duly ~~Countersigned~~ Cancd. attested

11 To the Registrar in charge of the S. H. Dy

No. G. 3059 dated 2.12.09.

Forwards the fee of Rs 30-/ thereby received with Sl. 8 & requests receipt in the same

12 To the Chief Engineer
The Chief Geologist
The Supt. Govt. Museum

No. G. 3060-2 dated 2.12.09

Forwards a copy to each of them for being filed in respective offices

13. From the officer in charge of S. H. Treasury

No 151 dated 4.12.09.

Acknowledges receipt of Rs 30 sent with Sl. 12

14 From the Chief Geologist

No. 1207 dated 7.12.09

Acknowledges receipt of the Specification sent with Sl. 12.

15 From the Supt. Govt. ~~Chem~~ Museum

No. 87 dated 7.12.09.

Acknowledges receipt of the Specification sent with Sl. 1

16 From the Chief Engineer

No. 9528 dated 18.12.09